REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Claim 1 has been amended to more clearly set forth the steps for producing a pad base for endermism. Support for these amendments is found on page 5, line 1 to page 6, line 19 of Applicants' specification. Claims 4 and 5 have been amended to depend on claim 1, thus further limiting the process for producing a pad base. New claims 7-9 have been added, further limiting the process for producing a pad base. Support for these new claims is found on page 14, line 24 to page 18, line 7; page 5, line 24 to page 6, line 1; and page 13, lines 7-11 of Applicants' specification.

Claims 2, 3 and 6 have been cancelled, without prejudice.

Thus, no new matter has been added to the application.

The patentability of the present invention over the disclosures of the references relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

Thus, the rejection of claims 1-3 under 35 U.S.C. § 102(b) as being anticipated by Yuzhakov et al. is respectfully traversed.

The Examiner takes the position that Yuzhakov et al. disclose a process for producing a pad base (20) for endermism in which a minute needle is installed upright on a skin side of a patch base for skin comprising immersing the end of multiple thin metal wires (12,14) in a solution of synthetic resin raw material in a lengthwise direction to adhere the material to the periphery of the wires and pulling the wires out to form multiple microneedles.

The methods disclosed in Figures 1-6 and 12-14 of Yuzhakov et al. relate to a pressure forming method for a pad base by placing a resin sheet on or below a thin metal wire. Specifically, a resin sheet is placed on the thin wire (solid-core), and then heated and dropped by gravity (or air pressure). Subsequently, by taking out the thin wire, a hollow centered microneedle is formed in the dropped part of the resin sheet.

On the contrary, Applicants' amended claim 1 recites a method for producing a pad base having a needle, comprising:

dissolving a synthetic resin raw material in a solvent to prepare a synthetic resin raw material solution,

immersing one side end of a thin metal wire in the synthetic resin raw material solution in a lengthwise direction to adhere the synthetic resin raw material solution to a periphery of the thin metal wire,

evaporating the solvent so as to lower a liquid level of the synthetic resin raw material solution,

forming the synthetic resin raw material solution adhered to the thin metal wire into a shape spreading toward the one side end of the thin metal wire,

hardening the synthetic resin raw material solution,

pulling out the thin metal wire to form a tubular minute needle having a hollow portion, and

installing said tubular minute needle upright on a skin side of a patch base for skin, to produce a pad base for endermism.

Accordingly, contrary to the teachings of Yuzhakov et al., Applicants can produce a pad base without a mold.

Additionally, the method illustrated in Figures 12-14 of Yuzhakov et al. tend to have a deficiency in a tip part of the microneedle when pulling out the thin metal wire from the hold, because a large friction resistance occurs between the tip part of the microneedle and the mold, thereby possibly resulting in the microneedle having uneven tips. On the contrary, Applicants' invention obtains a minute needle having a sharp tip as illustrated in Fig. 2, because no friction resistance occurs.

Applicants' invention is characterized in using a synthetic resin raw material dissolved in a solvent, so there is no need for using an expensive mold. Additionally, Applicants' invention has the following advantage: when producing a minute needle having a hollow tubular body structure, the length and width of the thin metal wire to be used can be adjusted, and the distance between the dish storing the synthetic resin raw material solution and the thin metal wire can also be adjusted, so that a pad base with minute needles in various sizes can be easily produced.

For these reasons, the invention of Applicants' pending claims is clearly patentable over Yuzhakov et al.

The rejection of claims 3-5 under 35 U.S.C. § 102(b) as being anticipated by Park et al. is respectfully traversed.

The Examiner takes the position that Park et al. disclose a pad base for endermism comprising a minute needle installed upright on a skin side of a patch base for skin, wherein the minute needle is a hollow tubular body and the outer wall spreads and thickens toward the bottom, and wherein the needles are made of biodegradable polylactic acid.

However, Park et al. fail to teach or suggest a pad base with an injection needle having a hollow tubular body. The microneedles 98 formed by the steps illustrated in Figures 7a-7k of Park et al. have a sharp angle only in the tip of the microneedles. (See paragraph [0146] in column 12 of Park et al.) Further, contrary to the minute needle of Applicants' invention, the microneedle of Park et al. is not hollow. Nor is the minute needles of Park et al. spread and thickened toward the bottom.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. However, Park et al. fail to teach, or suggest, a tubular minute needle having a hollow portion, which is spread and thickened toward the bottom, as required by Applicants' amended claims. Park et al. merely disclose the use of polylactic acid for a material for an injection needle.

Therefore, the subject matter of Applicants' pending claims is clearly patentable over Park et al.

The rejection of claims 3 and 6 under 35 U.S.C. § 102(b) as being anticipated by Rosenberg is respectfully traversed.

The Examiner takes the position that Rosenberg discloses a pad base for endermism comprising a minute needle (24) installed upright on a skin side of a patch base (16) for skin, wherein the minute needle is a hollow tubular body and the outer wall thereof spreads and is thickened toward the bottom for the patch base wherein the microneedle array can be attached to a connection spot (106) of a syringe (100).

Rosenberg discloses an injection needle having a hollow tubular body and a pad base installing the same. (See Figure 3A of Rosenberg.) However, the cited reference fails to teach or suggest a process for producing the injection needle.

As stated above, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. However, Rosenberg does not teach each and every limitation of Applicants' claimed process.

Therefore, the subject matter of Applicants' pending claims is clearly patentable over Rosenberg.

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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